FETC SUCCESS
U.S. Department of Energy
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ENVIRONMENTAL MANAGEMENT

- [ ] fossil energy
- [x] environmental
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Radionuclide Removal From Waste Streams: SpinTek II

States Impacted:
New Mexico, Ohio, South Carolina

Benefit Areas:
Cost Savings, Liquid Waste Streams, Waste Disposal

Participants:
SpinTek Systems, Inc.; Los Alamos National Laboratory; RMI (Ashtabula, Ohio)

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Description

The SpinTek ST-II High Shear Rotary Membrane Filtration System effectively separates radioactive materials from liquid waste or process streams. The system reduces the volume of radioactive materials to be disposed of at DOE nuclear weapons-related facilities, and yields effluent wastewater that is within discharge limits. The system may also be used to concentrate organic materials and fractionate closely sized particles.

The SpinTek ST-II High Shear Rotary Membrane Filtration System separates radioactive materials from process streams using a series of flat, round membrane disks set on a hollow rotating shaft inside a cylindrical housing. The influent enters the membrane chamber under pressure and is distributed across the membrane surface. Permeate is forced through the membrane and is collected in the hollow shaft and is discharged. The concentrate exits at the edge of the membrane packs.

Goals

The goal is the cost-effective separation and concentration of liquid wastes and process streams. The system treats extremely concentrated wastes that are difficult to treat using conventional methods.

Tangible Benefits

National: DOE has many nuclear weapons-related facilities where radioactive materials need to be separated from liquid wastes or process streams. This work will reduce the risk to the environment and public, and will lower disposal costs by reducing the volume of waste needing disposal. This technology is helping reduce the DOE mortgage for cleanup of contaminated sites, and offers a large potential cost savings to DOE.

Regional: Los Alamos National Laboratory (LANL) is replacing existing equipment with a SpinTek unit. The SpinTek system meets anticipated wastewater discharge limits, while the existing system does not. A total cost savings of $4 million is expected at LANL alone.